COLUMBIA RIVER WATER MANAGEMENT REPORT

WATER YEAR 2004

CHARTER
PREFACE
SUMMARY
TABLE OF CONTENTS
LIST OF TABLES
LIST OF FIGURES

I. INTRODUCTION

- A. PURPOSE
- B. BASIN DESCRIPTION
- C. WATER RESOURCES DEVELOPMENT
- D. TYPES OF RESERVOIR PROJECTS
- E. ANNUAL REGULATION CYCLE

II. HYDROMETEOROLOGY

- A. OBSERVATIONS
 - 1. Weather
 - 2. Snowpack
 - 3. Surface Water Supply Index
 - 4. Streamflow

B. FORECASTS

- 1. Runoff Volumes
- 2. Long-Range Peaks
- 3. Daily Streamflows

III. RESERVOIR REGULATION

A. SYSTEM OPERATION

IV. FUNCTIONAL ACCOMPLISHMENTS

- A. FLOOD DAMAGES
- B. ELECTRIC ENERGY
 - 1. Generation
 - 2. Marketing
 - 3. Intertie/Transmission
 - 4. Subscription/Power Rates
 - 5. BPA Financial Condition
- C. IRRIGATION
- D. NAVIGATION
- E. RECREATION
 - 1. Corps of Engineers
 - 2. Bureau of Reclamation
- F. WATER QUALITY
 - 1. Total Dissolved Gas Monitoring
 - 2. Water Temperature Monitoring
 - 3. Reports
- G. FISHERY OPERATIONS
 - 1. Actual Operation
 - 2. Spill and Flows for Fish

- 3. Juvenile Fish Runs
- 4. Adult Fish Runs

V. COLUMBIA RIVER WATER MANAGEMENT GROUP

VI. COLUMBIA RIVER TREATY

APPENDICES

- A. Glossary
- B. Abbreviations
- C. Charts

TABLES

- 1 Monthly Precipitation Totals by Sub-basin
- 2 Accumulated Monthly Precipitation Totals by Sub-basin
- 3 Basin Average Monthly Temperatures
- 4 Oregon Surface Water Supply Index (SWSI)- see NRCS web site
- 5 Streamflow as Percent of Monthly Normal
- 6 Mean Discharges and Percentages of Normal
- 7 Modified Discharge and Runoff, Columbia River at Grand Coulee, WA
- 8 Modified Discharge and Runoff Snake near Anatone, WA
- 9 Modified Discharge and Runoff Columbia River at The Dalles, OR
- 10 Modified Discharge and Runoff Willamette River at Salem, OR
- 11 Winter Flood Peaks
- 12 Spring Flood Peaks
- 13 Forecast and Observed Runoff Volume
- 14 Summary of Flood Damage Observed and Prevented
- 15 Effect of Reservoir Regulation on Flood Peaks and Damages 1948-2002
- 16 Sources of BPA Energy
- 17 Historical Power Purchases
- 18 BPA Market Purchases and Sales

FIGURES

- 1 Columbia River and Coastal Basins Map
- Willamette River Basin Map
- 3 Western Washington Map
- 4 Southern Oregon Coastal Basins Map
- 5 Pacific Northwest Reservoir System Schematic
- 6 Seasonal Precipitation for Columbia River Basin, Water Year 2002
- 7 Columbia Basin Snowpack for Water Year 2002
- 8 Accumulated Precipitation for WY 2002 at Primary Columbia River Basins
- 9 Pacific Northwest Monthly Temperature Departures from Normal for Dec 2001